

T² Bulletin

A Newsletter of the Local Technical Assistance Program (LTAP)

Issue 63, Summer 1999

A New Millennium... A New Name!

We are pleased to announce that we have a new name! With the changes that have occurred in the Local Technical Assistance Program over the years and the more recent reorganization of the T2 Center, the T2 Advisory Committee and the Center felt a name change was in order. To more accurately reflect who we are, the Advisory Committee and T2 Staff have changed the name of the Northwest Technology Transfer (T2) Center to the Washington State Technology Transfer Center.

The Center has the honor of being one of the first Technology Transfer Centers in the country. When it was established, the Center provided technical and training support regionally to Washington, Idaho, Oregon, and Alaska. As a regional center, our original name accurately described who we were. However, with expansion of RTAP and LTAP, each of the

individual states have established centers of their own redefining our customer base. So, a name change was in order to take us into the new millennium.

The Advisory Committee put on their thinking caps with the goal of keeping the Technology Transfer (T2) identity and incorporating the State identity. The final choice was the Washington State Technology Transfer (WST2) Center.

We're proud of our past and excited about the future as we start the new millennium with the other Technology Transfer Centers in our Region and around the country.

-Dan Sunde, Director



**Washington State
Technology Transfer Center
WSDOT**

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Denny Ingham Retires



Denny Ingham

After a very successful thirty years with the Washington State Department of Transportation, Denny Ingham, Assistant Secretary TransAid, retired May 31, 1999. For the past eight years Denny served as the Assistant Secretary of TransAid supporting the State's local agencies and administering the local agency portion of the federal aid transportation programs.

Denny is known for his progressive and visionary outlook. Along with his many duties and responsibilities Denny was a strong advocate for the use of new technology

and effective use of technical training. As such, he was a driving force in expanding the Technology Transfer Center promoting technical support, and developing a comprehensive training program for State's local agencies. He also played a key role in the development, implementation, and on-going support of the TRANSPEED Program, the training partnership between WSDOT, University of Washington, local agencies, and the private sector.

We in the T2 Center extend our gratitude for his years of support, encouragement, and vision, and wish him the very best in his future plans.

TransAid - New Leadership and a New Name



Paula Hammond

TransAid, the WSDOT Service Center in which the T2 Center resides, has also undergone a major change. With the retirement of Denny Ingham, Assistant Secretary TransAid, a major reorganization occurred that merged the Highways and Local Roadways Division and the TransAid Service Center into the new Highways and Local Programs (H&LP) Service Center.

Paula Hammond, formerly Director of WSDOT's Highways and Local Roadways Division, has assumed leadership of the new Service Center as the Assistant

Secretary of Highways and Local Programs. She comes with over 20 years experience with the WSDOT and a clear vision for the new Service Center. Her goal is "to enhance the coordination and partnership opportunities for all jurisdictions to support the economic vitality and quality of life our citizens expect."

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Simply click "Return". Then Click "Send".

You will then receive notification that you are subscribed. Now just wait for the next edition!



Giving Credit Where Credit's Due

We always want to properly acknowledge authors and their publications for articles presented in the T² Bulletin. Last edition one slipped by us. We want to

give proper recognition to Dean Baker, Columbian staff writer and The Columbian for permission to reprint their article Employees Try to Share, Save Alike. - The Columbian, 2/28/99

Spots Before Your Eyes?

Call the Infrared Camera Team

by Keith W. Anderson, WSDOT Research Office
Linda M. Pierce, PE, WSDOT Materials Laboratory
Dr. Joe Mahoney, University of Washington

One of the nagging problems that has plagued both the WSDOT Construction Office and Materials Laboratory for many years is the occurrence of localized "spots" of coarse surface texture in asphalt pavements. These spots show up only on certain projects and occur in a cyclic pattern that seems to coincide with the dumping of each new load of asphalt into the paving machine. The terms "cyclic segregation" and "truck fans" have been used in the past to describe this phenomena. The unsightly appearance of these spots is only one of the negative aspects of this phenomenon. The spots are also prone to premature failure due to fatigue, raveling, and moisture related damage.

The Materials Laboratory, Construction Office, Research Office, and the University of Washington are working jointly on this problem. Team members include Linda Pierce, Jeff Uhlmeyer, and Kim Willoughby from the WSDOT Materials Laboratory, Al Dyer and Dave Erickson from the WSDOT Construction Office, Keith Anderson from the

WSDOT Research Office and Professor Joe Mahoney and graduate student Travis Thompson from the University of Washington.



Segregated areas

Dr. Joe Mahoney and the Pavements Group at the Materials Laboratory were the first to discover a possible cause for these spots. Dr. Mahoney and one of his students studied the problem of cyclic segregation and determined one cause had to do with the occurrence of areas of cooler than desirable asphalt mix that was incorporated into the final mat behind the paver. These colder areas of mix could not be compacted to the same level as the surrounding hotter mix. The result was areas of pavement that had the classic coarse surface texture noted

previously. Another common cause is aggregate segregation of the asphalt mix that is frequently associated with large stone asphalt mixes (such as WSDOT Class E).

About a year after the conclusion of this initial study one of the larger asphalt plant manufacturers, Astec Industries, mentioned to Dr. Mahoney that they had purchased an infrared camera. Astec Industries personnel had been using the infrared camera, which graphically shows the temperature of whatever it is

pointed at, to examine the entire paving operation. What they had found was that a truck load of asphalt mix sometimes arrives at the paving machine with a crust of colder asphalt mix on the surface of the load. When the truck bed is tilted to dump its mix into the paving machine, this cooler mix breaks off as a single mass which travels through the paver without being remixed. The result is the fan shaped spots that we and others have observed.

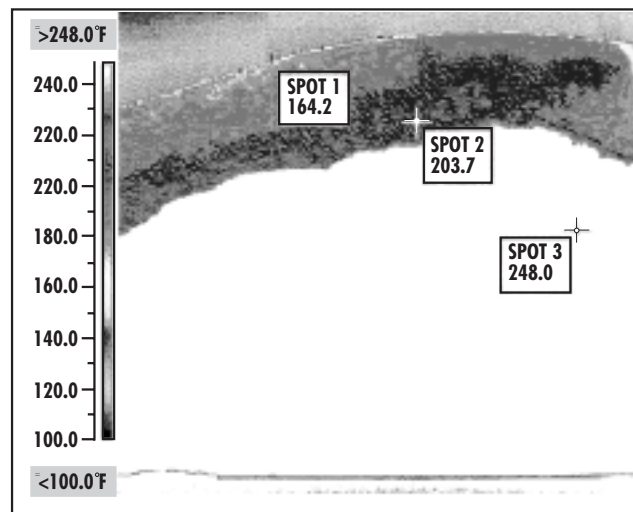
During the 1998 construction season, Joe Mahoney and the Pavements group from the Materials Laboratory borrowed the infrared camera from Astec Industries and visited four of WSDOT's paving projects. They made the following observations from these four projects:

- All four projects experienced significant temperature differentials.
- Concentrated areas of significantly cooler Hot Mix Asphalt (HMA) generally resulted in inadequate compaction of these areas (an average increase in air voids of about 3 to 4%).
- Concentrated areas of cooler HMA commonly occur during construction (based on this study and others).
- No significant aggregate segregation was observed for the four projects sampled.
- Good rolling practices can partially offset temperature differential related compaction problems.
- At least one type of Material Transfer Vehicle (MTV) can significantly reduce mat temperature differentials (however, only that one type of MTV was observed during the study).
- Temperature differentials are easily identified by infrared imaging.

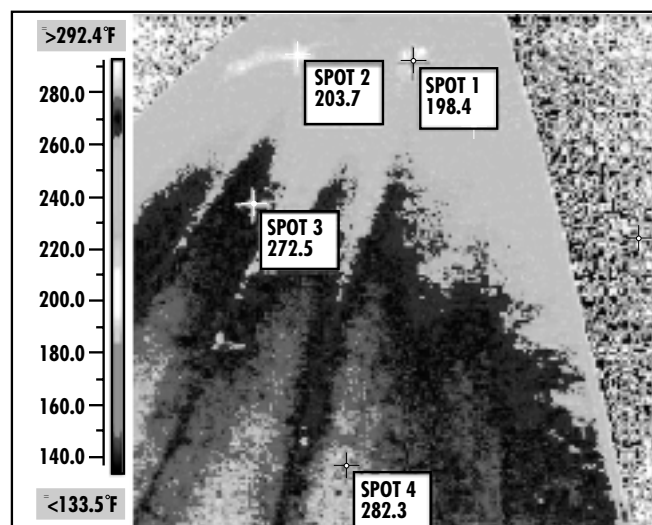
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Dumping asphalt mix into the paver



Infra-red image of asphalt mix in truck



Hot mix from crust result in cool spots in asphalt mat

This initial study was enough to convince Denny Jackson, then filling dual rolls as both State Construction Engineer and State Materials Engineer, to purchase an infrared camera. This camera is being used by the combined forces of the Construction Office and the Materials Laboratory to visit as many paving projects this season as possible. Dr. Mahoney continues to oversee the information gathering and will produce a report summarizing the effort later this year.

The teams objective this year is to find solutions that can be applied to mitigate the temperature differentials. Many of the WSDOT Regions have already specified the use of mass transfer vehicles on all of their large paving projects. Other Regions, which normally use a windrowing method instead of dump trucks, are finding that windrowing might be another solution. Other

mitigation techniques will also be investigated, such as, insulation of dump truck bodies, improved tarping practices, and remixing paving machines.

For more information on the Research Project, contact Keith W. Anderson at the WSDOT Research Office, (360)709-5405 or Linda M. Pierce at the WSDOT Materials Laboratory, (360)709-5470.

Year 2000 Road Builders' Clinic Scheduled

Pullman - The 51st annual Road Builders' Clinic will take place in Coeur d'Alene this year. Experts will present a multitude of diverse topics regarding the road profession. The keynote address will be presented by Bill Ballester, an internationally known expert on team building; he will focus on strengthening the workplace teams for engineers.

The clinic, scheduled for March 7-9, 2000, is designed to explore significant technical and managerial topics critical to highway, city, county and state

engineers, as well as designers and suppliers from the Pacific Northwest. Highlights include an environmental issues update, contractors and design build, pavement management, funding issues, team building and safety management.

The clinic annually attracts over 250 professional engineers, road superintendents, and related product vendors.

Early registration is required to reserve display space. The conference is officially sponsored by the Washington

State Transportation Center (WSTC), The University of Idaho and Washington State University colleges of engineering. Continuing Education Units are available. Early registration by January 1, 2000 is \$249 for attendees and \$325 for displayers.

For complete information call WSU Conferences & Institutes at 1-800-942-4978 or wsuconf@wsu.edu

A New Look for the Fall Roadshow

In the past the fall Roadshow has mirrored the Spring Roadshow with one instructor traveling to the agencies offering half-day video training on a very wide variety of technical and safety topics. As a result of a strategy session conducted with the T2 Advisory Committee, it was proposed that we change our approach in the fall by offering roadshow training sessions that are more in-depth and focused on one relevant topic. This fall we plan to do just that.

We have discovered that many of the agencies have been concentrating on snow and ice topics in the fall programs to prepare for the oncoming winter season. So, for the fall of 1999 we have decided to offer a

roadshow on snow and ice control. We will be scheduling a series of classes at local agencies strategically placed to allow others in the vicinity to attend with minimal travel time. We will try to bring the training as close to you as we can.

Watch for details as the program develops. We are beginning to set the program up now so let us know if you would like a session at your agency. We would also appreciate a list of topics you would like to have 4-6 hour training sessions on for future programs.

Please contact Laurel Gray at grayl@wsdot.wa.gov or (360) 705-7386.



ESA Stormwater Effects Guidance

For Projects which: increase impervious surface area, or clear, grade Or fill (Erosion Control), or have spill potential

by Marion Carey, ESA Specialist, WSDOT Environmental Affairs Office

The following article provides interim guidance on making effect determinations for biological assessments prepared for NMFS. **The effect determinations included here were agreed to between WSDOT and NMFS. This agreement is based on WSDOT's active salmon recovery efforts and programs.** Some of the effect determinations, but not all, have been agreed to by USFWS.

This document only covers specific project activities. This document does not cover all of the possible project elements which must be analyzed by the project biologist before a final effect determination based upon all of the project activities is made. Effect determinations must be project specific and this guidance may not fit in every case. There may be instances where the project conditions and site specific circumstances are such that the project does not meet the conditions outlined under one of the effect determinations (e.g. no effect) in this document, but the final analysis reaches that conclusion. In this case, the project specific conditions and rationales can be thoroughly documented in the biological assessment.

It is important to remember that this guidance is temporary and may change in the future as modifications are made to the

Highway Runoff Manual. Modifications to the *Highway Runoff Manual* are required within 2 years of any Ecology mandated change. Changes due to the Endangered Species Act (ESA) will be added in the form of an instructional letter. Until changes are made, continue to use the *Highway Runoff Manual* or other local ordinances (if they are more stringent) to design the stormwater treatment system.

Before making a final project specific effect determination, evaluate each project for the following:

- its location,
- the effects due to stormwater, clearing, grading and filling,
- the effects of all project elements on the baseline indicators

NOTE: Projects located within a Water Resource Inventory Area with no habitat or potential habitat for listed fish species will have no effect on listed fish species and require no further evaluation.

No Effect

Stormwater from new impervious surfaces has no effect when:

1. All runoff generated from new impervious surface can be infiltrated with pretreatment

Or

2. Stormwater treatment for a project is designed to = 1.40 x the Area of New Impervious surface.

This is based on the assumption that post-project net pollutant loading should not exceed the pre-project loading. In other words, the new impervious surface should not result in any additional pollution to the receiving waters. Since our stormwater BMPs are not 100% efficient, some amount of pre-existing impervious surface will need to be treated to attain a no-net increase in pollutant loading. The total minimum treatment level has been established at 140% of new impervious surface to make up for the fact that the Best Management Practices (BMP's) are not 100% efficient.

Example: A project adds 10 acres of new impervious surface area, which will be 100% treated. How much impervious surface will the project have to treat to attain a "no effects" determination?

Answer: 1.40×10 acres = 14.0 acres that is 10 acres of new impervious surface plus 4 acres of untreated existing surface area.

Clearing, Grading and Filling has no effect when:

1. the project is within ESU/DPS

And

2. clears, grades, and grubs over 300' away from any body of water, provided:

- Temporary Erosion Sedimentation Control (TESC)/ Stormwater Site Plan (SSP) is fully implemented (including spill control)
- "Environmental baseline" is not degraded, including spawning areas (determined by the BE), large woody debris, riparian habitat, etc.

May Affect, Not Likely to Adversely Affect

Stormwater from new impervious surfaces may affect but is not likely to adversely affect listed fish species and their habitat when:

Runoff from the new impervious surface area can be treated with detention and the treatment of the existing impervious surface area within the project limits is less than 40% of the new impervious surface area.

NOTE: The Western Washington Office of the USFWS is not in agreement with this effect call.

Clearing, Grading and Filling may affect but is not likely to adversely affect listed fish when:

The project within ESU/DPS, clears, grades, and grubs within 300 feet of any body of water (which supports or drains into a listed fish supporting body of water) but does not include "in water" work, provided:

- TESC/ SSP is fully implemented (including spill control)
- "Environmental baseline" is not degraded, including spawning areas (determined by BA), large woody debris (LWD), riparian habitat, etc.
- All other factors evaluated for the project by the project biologist result in a "no affect" or "may affect not likely to adversely affect" determination. This must include an analysis of direct and indirect effects of the action.

NOTE: Not all projects will be able to meet the above. Some may fall into the "may affect, likely to adversely affect call."

Projects which work within water, may affect but are not likely to adversely affect listed fish if all three of the following conditions are met:

- Work must be conducted within fish window (Gold & Fish list or as per HPA)
- Work must occur in a non-spawning or rearing area (as determined by project biologist in conjunction with WDFW Habitat Biologist or Tribal Biologist or other Fisheries Biologist)
- The project doesn't degrade the environmental baseline (Rearing areas include pools, eddies, structures etc. but do not include glides)

May Affect, Likely to Adversely Affect

Stormwater from new impervious surfaces may affect and is likely to adversely affect when:

Less than full treatment for all new impervious surfaces when project is within a subbasin that provides habitat or potential habitat for a listed fish species.

Clearing, Grading and Filling may affect and is likely to adversely affect listed fish when:

Project is within ESU/DPS and does not fully implement TESC/SSP (including spill control) and is within a subbasin that provides potential habitat for listed fish species.

Projects which work within water, but do not meet the "not likely to adversely affect" category for in-stream work will result in an "adverse affect" to listed fish.

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Bennifical Effect

Projects will have a beneficial effect when the stormwater treatment is :

Treatment + detention for an existing impervious area that is greater than 40% (new impervious area) within the project limits.

1. DPS = Distinct Population Segment, USFW designation for bull trout listings.

2. NMFS is concerned that the detention ponds and other BMP's may not be sized large enough due to the fact that the Highway Runoff Manual is based on outdated rainfall data. Section 2-5 of the Highway Runoff Manual includes a chart which addresses the current safety margin included in the pond's size. This section will be revised to increase the safety margin at a later date. In addition, a study is underway to update the rainfall data.

3. A direct and indirect effect analysis must be included which covers the action area. The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. Thus, if it is a bridge replacement , address the upstream and down stream impacts, bank impacts, construction easement impacts, the road approach impacts, temporary bridge impacts, impacts caused by the detour route, etc.

10 Stormwater Items That Should Be Included in a BA

By Marion Carey, ESA Specialist, WSDOT Environmental Affairs Office

1. How much new impervious surface is the project creating?

2. How much of the new impervious surface is being treated for stormwater? (express as a % of total or provide an amount)

3. What BMP's are being used to treat the new impervious surface for :

- quality
- quantity (Is infiltration being used?)
- What is the receiving area or water body for each BMP ? This includes overflow channels.

4. What is the amount of existing (pre-project) impervious surface in the project area?

5. How much of the existing impervious surface in the project area is currently (pre-project) being treated for stormwater?

6. What BMPs are being used to treat the existing impervious surface for:

- quality
- quantity
- What is the receiving area or waterbody for each BMP?

7. How much of the untreated existing impervious surface is proposed to be treated as part of this project?

8. What BMP's are proposed for the treatment of the untreated existing impervious listed above in # 7 ?

- Quality

- Quantity
- What is the receiving area or waterbody for the BMP's?

9. If the project is not infiltrating all of the runoff from the new impervious, and is unable to treat a minimum of 140% of the new impervious surface for quality and quantity, explain why.

10. Is off-site storm water being treated in storm water facilities prior to initiation of the project?

If yes, will this storm water continue to be treated to the same level?

- Please note that units of measurement can be in English or metric as long as they are consistent.

GPS Users - A Rollover Reminder!

Roger Chappell, T2 Technology Integration Specialist

This is a good time to remind all of you who use GPS receivers and data about GPS "Week Rollover."

This is a "heads up" to check with your vendors or on the web to see if your GPS equipment is compliant. For those of you who use and store GPS data, remember that as you go from GPS week 1 (Jan. 6th, 1980) to GPS week 1 again (Aug. 21st, 1999), you have the potential for over writing your historical records. This may not be a great concern now, because the use of GPS wasn't as common twenty years ago, but learn the lesson from Y2K people, and safeguard your data for the future. Someday, twenty years from now, this week will repeat itself...

Important Information for GPS Users

U.S. DEPARTMENT
OF TRANSPORTATION
Office of the Secretary ~
Office of Public Affairs
June 4, 1999, DOT 80-99

Users of the Global Positioning System (GPS) should be aware of two important dates: Aug. 22, 1999, the "End-of-Week" (EOW) rollover; and Jan. 1, 2000 (Y2K).

The Department of Defense (DOD) says the date changes are unlikely to affect the operation of GPS satellites or DOD's ground control center. But GPS receivers that consumers use may be affected by the date change. That can have important safety implications.

Consumers who depend on GPS for geographic locations at sea, on land or in the air, may experience one of the following problems with their receiver:

- It will be unable to locate the satellites, resulting in the receiver not working.
- It will take more time than usual to locate the satellites.
- **It will appear to be working but display inaccurate positions, times or dates.**

What is GPS?

GPS is a satellite-based system that allows consumers who use electronic receivers to determine their location. Recreational boaters and pilots, hikers, campers, hunters, and fishermen are among the consumers who rely on GPS receivers. The military and businesses also use GPS.

End-of-the-Week Rollover and Y2K

The GPS EOW rollover occurs every 1,024 weeks — about once every 20 years. The GPS system calculates time by counting the number of weeks since Jan. 6, 1980 — up to a maximum of 1,023 weeks. At midnight between Aug. 21-22, 1999, the GPS week "counter" will roll back to zero weeks. DOD says this will not create problems for the GPS satellites or DOD's GPS ground control center, but it could present a problem for consumers

who use older GPS receivers and related applications. That's because after Aug. 21, 1999, receivers could process satellite data incorrectly and display inaccurate information.

As for the Year 2000 date change, DOD has determined that the GPS satellites and its ground control center will operate properly after Dec. 31, 1999. But if consumer GPS receivers and applications are not Y2K-ready, they could process satellite data incorrectly.

What Should You Do?

If you use GPS, check with your receiver manufacturer to find out if your receiver and applications are EOW rollover- and Y2K-compliant. You may want to check the Coast Guard Navigation Center's web site (www.navcen.uscg.mil/gps/geninfo/y2k/default.htm), where the Department of Transportation has posted a list of receiver manufacturers and contacts. You also can call the free Y2K consumer hotline (1-888-USA-4-Y2K) for manufacturer contact information. You will need to tell the manufacturer your receiver's model, serial number, and the firmware version or release date displayed on the startup screen.

For additional information visit the DOT Public Affairs Web Site at <http://www.dot.govbriefing.htm> or contact Bill Mosley at (202) 366-5571.

Navigating the web

by Marcia L. Brink
Communication Specialist
Center for Transportation Research and Education
Iowa State University Research Park

Newcomers to the World Wide Web (web) can feel overwhelmed when trying to find a particular site or specific information on-line if they don't know the URL (uniform resource locator, or web address). Here are some suggestions for navigating the web without getting lost in it.

All search engines are not created equal

You can "search" the web using commercial on-line services, or search engines. A few popular search engines include the following:

- **Alta Vista**
www.altavista.digital.com
- **Excite**
www.excite.com
- **HotBot**
www.hotbot.com
- **InfoSeek Guide**
guide.infoseek.com
- **Lycos**
www.lycos.com
- **Metacrawler**
www.metacrawler.com
- **WebCrawler**
www.webcrawler.com
- **Yahoo!**
www.yahoo.com

Search engines generally function as either subject catalogs or as automatic search indexes.

With subject catalogs, staff review thousands of web sites daily and classify them for you.

Subject catalogs work best when you're trying to find information that easily falls into a general category, like education or government. Yahoo! is a popular catalog search engine.

To use a subject catalog, go to its web site and select the category that most closely matches the subject you're searching for. Click down through the levels to find the information you want. For example, to find a council of governments' web site using Yahoo!, click the category government, then web directories, then COGs, then state.

If you're looking for something more specific, like the FHWA's latest recommendations for designing well drained pavements, use an automatic search index. WebCrawler, Excite, and Alta Vista are popular search indexes. When you enter a term in an automatic search index, the engine searches thousands of web servers and collects and displays URLs for pages that include the same term, or perhaps related terms. The URLs are generally displayed from highest to lowest order of possible relevance.

Before using an automated search index, develop a list of



words related to your subject (e.g., drainage, FHWA, pavement, highway, transportation, base materials, etc.). Be as specific as possible. If you search for a few general terms, the engine will find many, perhaps thousands, of "hits"; if you search for specific terms, the engine will find a more manageable and perhaps useful number of hits.

Tips

Here are some suggestions for refining a search using an automated search index:

- Use Boolean ("and," "or") and other operators to include or omit terms and to combine words into phrases (e.g., "drainable pavement" is more specific than "drainage" and "pavement"). Most engines offer tips on conducting advanced searches using operators and specialized syntax.
- Try the search with different combinations of specific words and phrases.
- Substitute synonyms for your terms (e.g., "highway" for "road").
- Use the search engine's built-in tools for refining your search.
- Do the same search with at least one other search index.

Using the same search terms, different engines will return different URLs. In fact, the same engine may return a slightly

- different list of URLs from day to day, even hour to hour!
- Find a general web site (e.g., the FHWA's) through a subject catalog and then use the site's internal search engine (e.g., to find the FHWA's on-line information about drainable pavements).
- Try a meta-search service that combines results from several search engines into one search. Such a service saves you the trouble of switching back and forth between search engines.

However, results of a meta-

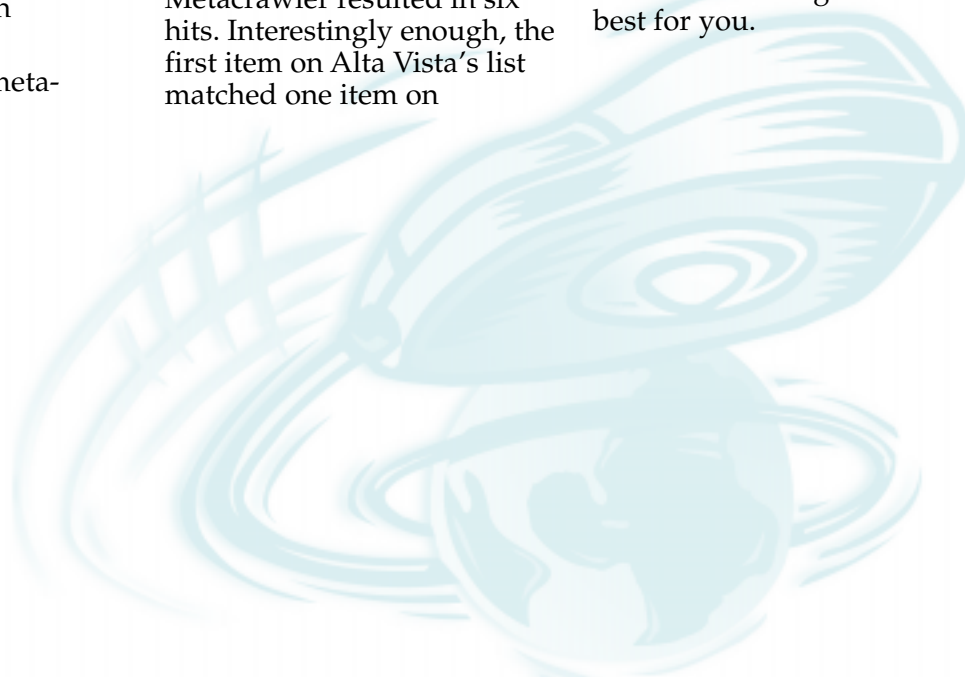
search may be more limited than results of separate searches using several engines. Metacrawler is a popular meta-search service: **www.metacrawler.com/**.

- When your searches yield helpful sites, save the URLs of your favorite sites so you can return to them later. In Netscape browser, use the "Bookmark" menu to save URLs; in Explorer use the "Favorites" menu.
- Searching for "pavement" and "drainage" and "FHWA" with AltaVista resulted in 23,000-plus web addresses. Searching for "FHWA" and "drainable pavement" using Metacrawler resulted in six hits. Interestingly enough, the first item on Alta Vista's list matched one item on

Metacrawler's list: **<http://ota.fhwa.dot.gov/tech/pave/index.html>**. This site includes state-of-the-practice information about designing drainable pavements published by the FHWA's Office of Technology Applications.

For more information, an excellent beginner's resource for searching the web can be found at IowaAccess's on-line site: **www.iowaccess.org/main/projects/3/mod3.html**.

Learning to untangle the web takes patience and persistence. Experiment to find the engines and search strategies that work best for you.



Technology in Rural Transportation

A recent study documented more than fifty proven, cost-effective, "low-tech" solutions to rural transportation needs, most developed or implemented by local transportation professionals. One of these solutions is outlined below.



Learn all about the simple solutions on the Internet at <http://inform.enterprise.prog.org>

The simple solutions report is available from Hau To at (651) 686-6321, or email: to@crc-corp.com

Radio Controlled Crosswalk Push-Buttons

Overall goal:	To make crosswalk signal activation easier for disabled pedestrians.
Technical approach:	The system uses a hand-held radio device similar to a garage door opener. When a button on the device is pressed in the vicinity of an equipped crosswalk, the request for the "walk" signal is activated.
Current status:	Prototype devices have been successfully tested in a laboratory environment.
Location / geographic scope:	City of Colorado Springs, Colorado.
Agencies involved:	City of Colorado Springs.
Cost information:	It is estimated that it would cost less than \$500 to equip a crosswalk with the necessary receiver. Costs for the hand-held devices should also be very low.
Key contacts:	John Merritt, City of Colorado Springs. (719) 578-6663.
Have goals been achieved?	
Solution timeline:	The City of Colorado Springs is considering handing over the project to local college students as an engineering project. No specific target dates for system implementation have been set.



Y2K Beyond 2000

by Roger Chappell, T2 Technology Integration Specialist

As part of our on-going series about Y2K, I would like to focus this edition on contingency planning.

My New College Edition of The American Heritage Dictionary of the English Language defines "contingency" as:

"1. a. An event that may occur but that is not likely intended; a possibility. b. A possibility that must be prepared against; future emergency."

Since we don't have a crystal ball, planning for future emergencies, possible events, or service disruptions, is a healthy exercise for any organization. Unfortunately, a lot of planning goes into preparing for the **next** earthquake **just after** you have experienced a severe one. The problem lies in not planning in time or not thoroughly testing the plan early.

At the time of this publication your agency will be running very short of time for planning. If your "Contingency Plan" is still only on paper and not TESTED, then your organization is not prepared for the "event that may occur."

Fortunately, most organizations saw Y2K coming and have prepared for it. In the Winter 1999 issue of the *T2 Bulletin* we published a lengthy article on contingency planning that may help you in the polishing stages.

I can't urge testing the implementation of your contingency plan enough. Without testing it is only a nice piece of paper. The question is... will it work when you need it? You don't know that until you've walked through it. The time for testing isn't in the crucible of crisis.

When testing your contingency plan, have you developed multiple scenarios to test against? The more you test the more depth and breadth your plan will develop.

Are you keeping up on maintenance of your plan? There are things like your personnel contact lists that need to be kept current.

In a crisis situation you want to control all the variables you can, and if you can't control them, at least you want to have a verified plan to help you work through or around them. If you have planned ahead and validated that the plan is executable, you will be able to better manage the situation, rather than the situation managing you.

The following is a reprint of a letter written by Nels Anderson for the Y2K managers at WSDOT. He has done a good job of outlining the complexities encountered in the

telecommunications world. This is just one of the major areas that your contingency plan should include. How well you can marshal your resources and communicate with your organization, customers and suppliers are critical to your "vital business" functions:

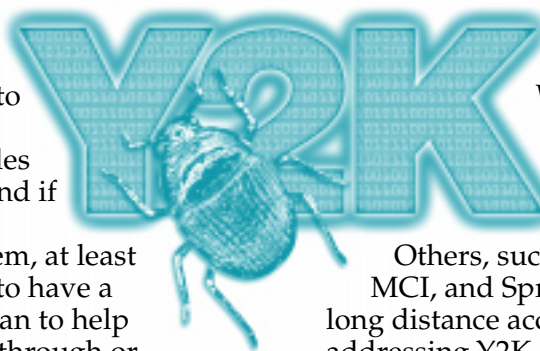
I agreed that I would try to answer many of the Y2K questions that many of you had regarding the local telephone providers for all of Washington state. These providers consist of the large regulated company, USWest, and many smaller non-regulated companies called independents, which include GTE, Century (PTI), Ellensburg, Yelm, and others. All the independent telephone

companies (telco's) belong to the Washington Independent Telephone Association (WITA).

Others, such as AT&T, MCI, and Sprint provide long distance access and are addressing Y2K concerns as a large scale effort.

First, I would like to mention that WSDOT MIS has thoroughly researched Y2K compliance issues with the larger providers and we feel that they have done everything in their power to ensure service. As far as the independent providers, they must adhere to the same Y2K requirements set

Please continue to next page



forthby the NRIC, WUTA, WITA and FCC. With the complexity of the North American telephone infrastructure, it is possible that some components or systems may turn out to be non-compliant. The companies involved have committed to doing all that they can to minimize disruption in service as a result. For this reason, MIS is confident that we have done all that we can at this point to prepare for the Year 2000.

If you would like to better understand each type of service and the providers involved, please read on. I have provided Internet site addresses for the majority of the service providers if you would like to conduct your own research.

How has the industry defined Year 2000 compliance?

USWest and WITA both have the same basic Year 2000 compliance definition and charter which is shared widely across the telecommunications industry. This definition provides a common goal for the Y2K readiness. The compliance definition is as follows:

“Year 2000 Compliant” shall mean that all Products record, store, process, calculate, function, operate, sort, compare, and present calendar dates falling on, during, and after (and, if applicable, spans of time including) January 1, 2000, and will calculate any information dependent on or relating to such dates in the same manner, and with the functionality, data integrity, and performance, as the Products on or before December 31, 1999.

Telecommunications is a very complex business, which, being technology focused, relies on a myriad of systems. Third party vendors provide many of these systems and are in different stages of Y2K completion. There are many other concerns outside of the local telco's that could have a profound impact on telephone services. For example, one of the greatest of these is the power grid. Even though most central offices have generators, depending on the length of a potential power interruption, fuel and mechanical concerns do exist.

Power Company / Grid:

It is imperative for power to be available for all the above and below vendors/services. This is self explanatory.

Long Distance Carriers, i.e. AT&T, MCI, Sprint, etc.:

These large companies rely on their large networks and equipment to transport, service, and bill for long distance services. They also support services such as 1-800/888 toll free calling, 1-700/900, and custom services. These carriers mainly rely on many of the same manufacturers and services as do the local telco's. Today, these services are transported many different ways, land based copper lines, fiber optics, satellite, microwave, etc. so you can see it is very complex.

Cellular Services, i.e. Airtouch, AT&T, Sprint, etc. :

These services again rely on much of the same technology found in central offices and carriers, however the signal is converted to analog or digital air waves via the cellular base

stations. Most of these systems are protected by back-up generators and redundant services, but, it may depend on the popularity of the location. Still, these cellular bases are supported by telco's/carriers but are independent thereof.

Paging & Radio Services:

These services are getting away from the above study requirements and the local telco's responsibilities. However, they are to be considered like the rest of the above services, relying on the telco's, carriers and power companies to provide these services. A lot of the paging and other services are provided via satellite, we all know what happens when one of them heads out of orbit as we experienced last year!

Customer Owned Equipment, i.e. WSDOT Definity, Panasonic, Data, etc. :

As you already know, if WSDOT or any other customer equipment is not Y2K compliant, it will affect their service even though the telco services are available.

Please continue to next page

As you can see, all of the above services are intertwined and overlapping. If there is a weak link somewhere in the middle it could affect many of the services. Ever since the deregulation and the break up of the large service providers, these concerns have become more and more complex. This is just a glimpse of the interoperability of the telecommunications world.

The following web sites will allow you to easily research individual service providers. Some of them provide good Y2K information and Y2K compliance statements, where others are more vague. The first five organizations, NRIC (Network Reliability and Interoperability Council), WITA, WUTC (Washington Utilities & Transportation Commission), FCC and DIS will provide an overall industry Y2K direction and responsibility statement for all providers.

Y2K information

<http://www.nric.org/pubs/>

<http://www.wita-tel.org/>

<http://www.wutc.wa.gov/webocs.nsf/43c71d25c49d32408825650200787e6636fdeaef216af098825666d0078dec2?OpenDocument>

<http://www.fcc.gov/year2000/>

<http://www.wa.gov/dis/2000/index.htm>

<http://www.att.com/year2000/testing.html>

<http://www.uswest.com/com/customers/year2000/compliance.html>

<http://www.gte.com/customersupport/Y2k/readiness.html#Compliance>

<http://www.yelmtel.com/yr2000.htm#Top>

http://www.mciworldcom.com/about_the_company/year_2000_compliance/compliance.shtml

<http://www.sprint.com:80/y2k/>

<http://www.elltel.com/>

<http://www.inlandnet.com/telephon.html>

<http://www.tdstelecom.com/>

<http://www.centurytel.com/news/Y2K.htm>



The 1999 NWPMA Conference

Draws on Expertise from Across the US and Canada

by Paul Sachs, T2 Pavement Technology Engineer

The 1999 Northwest Pavement Management Association Fall Conference is scheduled for October 18 -21, 1999 in Portland, Oregon. This years conference program is an exciting one. The conference begins on Monday, October 18th with 2 workshops. The first is a Federal Highway Administration/National Highway Institute one day course entitled "Pavement Management Systems for Local Agencies." This is an introduction to pavement management. The class will be taught by Margo Yapp of Nichols Valerga and Associates.

The second workshop on October 18th will be, "How to Develop and Sell a Preventive Maintenance Program". This class is being developed for the conference drawn from material that is used for an International Surface Seal Association (ISSA) course. The class will be taught by Roger Smith of Texas A&M University.

On Tuesday the 19th the conference sessions begin. The keynote speakers for the conference are Ralph Haas of Waterloo University, Ontario, Canada and Roger Smith. Ralph continues to be a very influential person in the pavement management world. He co-authored one of the first books on pavement management in the late 1960's and is very knowledgeable. He will provide the conference

with a vision of "Pavement Management- Past, Present and Future." Roger Smith has been involved in local agency pavement management for close to 20 years. He will talk about the future of local agency pavement management.

The rest of the first day is filled with thought provoking and useful sessions that will help you in your day to day pavement management activities. These include sessions on "How to use PMS Information to Communicate to your Policy Board;" an "FHWA Update on Pavement Management" activities, which also provide a discussion on the new Western Resource Center; a discussion on joint procurement activities, "Sharing Public Works Resources Between agencies Cuts Overall Costs;" and "Superpave Applications in the NW - 1999." See the list following this article for other interesting sessions scheduled on the first day.

On Wednesday the 20th, the morning begins with an update on the Endangered Species Act. A panel discussion made up of representatives from the FHWA division offices and the state DOT's from Idaho, Oregon and Washington, will highlight how the ESA has

impacted the three states and what can be expected in the future. This will be a great opportunity to learn about the ESA process.

After the ESA discussion, the second day regular session will begin. Some of the session on tap are, "Impacts of Utility Trenching on Pavements;" "Using PMS Results to Acquire Additional Revenues;" and "Innovative Local Agency Pavement Treatments." A full schedule of the second days sessions are included after this article.

The third day is a half day. It opens with a presentation from Mo Shahrin of the US Army Corps of Engineers. Mo developed the PAVER system for the corps originally and has continued to work with PAVER since that time. He will talk about the recent adoption by ASTM of the condition index used by the PAVER, as a Standard Practice. The conference will end with a discussion of the future of Pavement Management as we move closer and closer to the year 2000.

Information on conference registration and session schedules is included on pages 19-21. Please fill out the registration form and return it to Vicki Griffiths of the NWPMA. The NWPMA looks forward to seeing you at the Fall Conference in Portland in October.

1999 Northwest Pavement Management Association Fall Conference - October 18-21 1999



Registration Form

Name: _____

Name as you want it to appear on your name tag: _____

Title: _____

Organization: _____

Mailing Address: _____

City: _____ State: _____ Zip Code + 4: _____

Phone Number: (____) _____

Fax Number: (____) _____

E-Mail Address: _____

Workshop Information

Two Workshops are offered on October 18th, 8:00 AM - 4:30 PM. Please select one of the following:

- ☐ FHWA/NHI "Introduction to Pavement Management for Locals".
- ☐ ISSA "How to Develop and Sell a Preventive Maintenance Program".

Registration Information

Registration and Meals: \$175.00 per person. Make Checks payable to NWPMA

Additional tickets for Wednesday Banquet: \$25.50 per person

Please Note: Meals are not included for Monday's Tutorials. The meals begin with Tuesday Breakfast

Hotel Information

Conference Rate: \$89.00 + 9% tax per night

Doubletree Hotel - Columbia River

Conference Rate: \$89.00 + 9% tax per night

1401 N Hayden Island Drive

Portland, Oregon 97217

Hotel Reservations: (503)283-2111 ext. 4185 or ext. 4186

To reserve a room at conference rates reservations must be made with the hotel by October 1, 1999.

To get conference rate tell the hotel you are with the "NWPMA". Mail or fax registration and payment or purchase order for conference by October 1, 1999 To:

Vicki Griffiths

Skagit County Public Works

1111 Cleveland Avenue

Mt. Vernon, Washington 98273-4215

FAX: (360)336-9369 Phone: (360)336-9333 ext. 239

Make Checks payable to NWPMA

October 18 Workshops

1999 NORTHWEST PAVEMENT MANAGEMENT ASSOCIATION
FALL CONFERENCE

Monday, October 18, 1999

8:00 AM	Pavement Management Systems for Local Agencies All Day Workshop <div>Lunch</div> Pavement Management Systems for Local Agencies All Day Workshop	How to Develop and Sell a Preventive Maintenance Program All Day Workshop <div>Lunch</div> How to Develop and Sell a Preventive Maintenance Program All Day Workshop
9:00 AM		
10:00 AM		
11:00 AM		
12:00 PM		
1:00 PM		
2:00 PM		
3:00 PM		
4:00 PM		
5:00 PM		

Fall Conference 1999 Day 1

1999 NORTHWEST PAVEMENT MANAGEMENT ASSOCIATION
FALL CONFERENCE

TUESDAY, OCTOBER 19, 1999

7:00 am - 5:00 p.m. Registration and Message Center Wilson Room		
7:00 AM	Breakfast Willamette Room	
8:00 AM	Opening Session Pavement Management - Past, Present and Future Ralph Haas, University of Waterloo Roger Smith, Texas Transportation Institute	
9:00 AM		
10:00 AM	Refreshment Break in Exhibitor's Area Rogue Room	
10:30 AM	Sharing Public Works Resources between Agencies Cuts Overall Costs (GEM) Bruce Cross, Clark County	How to Effectively use PMS Information to Communicate with City/County Policy Boards Maggie Broten, Ap Tech
12:00 PM	Lunch Willamette Room	Lunch Willamette Room
1:00 PM	FHWA Update on Pavement Management Cathy Nicholas, FHWA Washington Division Introduction to the FHWA Western Resource Center Western FHWA Resource Center	What's new at CRAB in PMS Dave Whitcher, CRAB
1:45 PM		Online Bid Solicitation Keith Jones, eBid Systems
2:30 PM	Refreshment Break in Exhibitor's Area Rogue Room	Refreshment Break in Exhibitor's Area Rogue Room
3:00 PM	GPS other techy stuff	ODOT Pavement Management Activities Cole Mullis, ODOT
4:00 PM	Getting Started in PMS Chuck Greniger, Grays Harbor County	Superpave Applications in the NW - 1999 Rob Molohan, WSDOT
5:00 PM	NWPMA Executive Board Meeting	
6:00 PM	Dinner (On your own)	

Fall Conference 1999 Day 2

1999 NORTHWEST PAVEMENT MANAGEMENT ASSOCIATION
FALL CONFERENCE

Wednesday, OCTOBER 20, 1999

7:00 am - 5:00 p.m. Registration and Message Center Wilson Room		
7:00 AM	Breakfast Willamette Room	
8:00 AM	Opening Session	
9:00 AM	ESA Update on Road Projects in the NW - 1999 FHWA Division Offices, Sharon Price, WA., Elton Chang, OR., and Mary Gray, ID., Brian Hasselbach, WSDOT, Sue Chase, ODOT and IDOT	
10:00 AM	Refreshment Break in Exhibitor's Area Rogue Room	
10:30 AM	Innovative Local Agency Pavement Treatments Ultra Thin White Topping, Robert Goenen, City of Bellevue High Temp Chip Seal Stone Matrix Asphalt, Jack Crumley, City of Renton	Using PMS Results to Acquire Additional \$ Oregon Statewide effort, Mike Rybka, Marion County Vicki Griffiths, Skagit County
12:00 PM	Lunch	Lunch
1:00 PM	Using PMS info to create a Multi Year Priority Plan Joe Araucto, Island County	How Automated Data Collection is Helping Local PW Les Olson, Thurston County Roger Chappel WA T2 Center Mike Rybka, Marion County
1:45 PM	Using GIS in PMS City of Yakima	
2:30 PM	Refreshment Break in Exhibitor's Area Rogue Room	Refreshment Break in Exhibitor's Area Rogue Room
3:00 PM	Impacts of Utility Trenching on Pavements RUTS - Regional Utility Trenching Study, Hisham Noeimi, MTC Utility Trenching Seattle Study Margot Yapp, Nichols and Susan Chu, Seattle	Using Engineering Manuals on CD Rom Matt Love, WSDOT
4:00 PM		Unique Pavement Projects in Washington Jeff Uhlmeier, WSDOT
5:00 PM	Free Time	
6:30 PM	Banquet, Awards Presentation, Election Results Entertainment	

Fall Conference 1999 Day 3

1999 NORTHWEST PAVEMENT MANAGEMENT ASSOCIATION
FALL CONFERENCE

Thursday, OCTOBER 21, 1999

7:00 AM	
8:00 AM	General Session 3rd Day ASTM Pavement Condition Standard Practice Mo Shahin, US Army Corps of Engineers
9:00 AM	
10:00 AM	Break
10:30 AM	The future of Pavement Management in the 21st Century Where Do we Go from Here!

8 Things to Avoid for a Successful Biological Assessment

By Brian Hasselbach, H&LP Environmental Engineer, WSDOT

The WSDOT Environmental Affairs Office has put together a short list of fatal flaws to watch for when conducting the Biological Assessments (BAs). Addressing these issues in your agency's future BAs will help facilitate a more efficient concurrence process:

1. Lack of a vicinity map - make sure a map is included, is legible, and describes where bodies of water are.
2. Failure to obtain all of the species listings.
3. Failure to include copies of the species listings in the BA.
4. Failure to discuss if the species are in the area
 - Is the habitat used by the listed species?
 - Is there suitable habitat for species within the project vicinity?
5. Lack of justification for the effect determination made.



You must make an effect determination for each listed species and you must provide supporting

evidence/justification for why the effect was made.

6. Failure to adequately explain the project activities.

Be sure to explain the activities. Don't assume the

reviewer is familiar with your projects or your terminology. For example, to a fish biologist, channelization means we are straightening and ditching the stream. To a WSDOT engineer, channelization has a significantly different meaning. Avoid engineering jargon. Describe your activities in clear layman's terms the reviewer can understand.

7. Failure to provide a complete project description and a complete discussion of impacts or lack of impacts for a no-

effects letter.

Address the creation of new impervious surface, the type of stormwater treatment that will occur, impacts to the riparian habitat, and be very clear about what Best Management Practices (BMP's) will be used and, if in water, work will or will not occur.

8. Failure to use the correct terminology for effect calls:

Remember, make an effect determination for each listed species consisting of one of the following effect calls:

- "no effect"
- "may affect, not likely to adversely affect"
- "may affect, likely to adversely affect"
- "beneficial effect"

For candidate species and species of concern, make an impact statement.

NOTE: For proposed species make a jeopardy call and a conditional effect determination. Remember that a jeopardy call is for the species as a whole, not for an individual or individuals of a species population.

Roundabout Conference Update

Locations and Date Changed!!!

Well, the saying about the only thing constant is change is still very true ...

Both the location and date that were previously announced have been changed. The new location is SeaTac. The new dates are May 1-3, 2000.

The conference will begin at noon on May 1st and end at noon on May 3rd.

Currently the speakers we have scheduled are:

- * Dan Burden the "Livable Communities" guru. Need I say more?
- * Bruce Robinson of Kittelson and Associates. Kittelson developed the FHWA roundabout design guide. The document should be

coming out this fall. It is tremendously informative and gives plenty of background information for both new and not as new roundabout designers. It will be a great benefit to all interested in roundabouts!

Tentative speakers are:

- * Michael Wallwork, the Australian traffic engineer that helped put together the "Florida Roundabout Design Guide." Michael is now working as a consultant with roundabouts as one of his specialties. He teaches great classes on roundabout design.
- * Michael Kyte from the University of Idaho. Michael organized the Third International Symposium

on "Intersections Without Traffic Signals," held in Portland Oregon, July 1997. Michael has a great roundabout analysis background.

I need to get an idea of the interest level out there in attending. If you plan to attend, please send me an E-mail at sharard@wsdot.wa.gov - so I may tally up possible attendees.

If you have questions. Please call at (360) 705-7383 or e-mail at the above address! Thanks
- Darlene



Roundabout

Free Publications From Your T² Center

For Washington residents only due to limited quantities.

Name: _____

Agency: _____

Address: _____

City: _____ **Zip** _____

Phone: (_____) _____

Check the items you would like to order.

- ☐ Current Application and Successful Implementation of Local Agency Pavement Management in the United States, FHWA, 1997
- ☐ Scrap Tire Utilization Technologies, NAPA
- ☐ State-of-the-Art Survey of Flexible Pavement Crack Sealing Procedures in the United States, CRREL, 1992
- ☐ Maintenance of Aggregate and Earth Roads, NWT² Center (1994 reprint)
- ☐ International State-of-the-Art Colloquium on Low-Temperature Asphalt Pavement Cracking, CRREL
- ☐ Family Emergency Preparedness Plan, American Red Cross, et al.
- ☐ Getting People Walking: Municipal Strategies to Increase Pedestrian Travel, Rhys Roth, Energy Outreach Center
- ☐ The Superpave System – New Tools for Designing and Building More Durable Asphalt Pavements, FHWA
- ☐ A Guide to the Federal-Aid Highway Emergency Relief Program, USDOT, June 1995
- ☐ Pothole Primer — A Public Administrative Guide, CRREL, 1989
- ☐ Redevelopment for Livable Communities, Rhys Roth, Energy Outreach Center
- ☐ A Guidebook for Residential Traffic Management, NWT² Center, 1994
- ☐ A Guide for Student Pedestrian Safety, KJS, 1996
- ☐ Pavement Surface Condition Field Rating Manual for Asphalt Pavement, NWPMA, WSDOT. 1999
- ☐ A Guide for Local Agency Pavement Managers, NWT² Center, 1994
- ☐ Local Agency Pavement Management Application Guide, NWT² Center, 1997
- ☐ Positive Guidance and Older Motorists — Guidelines for Maintenance Supervisors, Texas A&M
- ☐ Evaluation of Automated Pavement Distress Data Collection Procedures for Local Agency Pavement Management, Texas A&M, WSDOT, ODOT 1996
- ☐ Traffic Calming: A Guide to Street Sharing, Michael Wallwork, 1993
- ☐ Basic Metric System, WSDOT
- ☐ The Impact of Excavation on San Francisco Streets. This study evaluates the impacts utility cuts have done to the street and road network, September 1998
- ☐ Rating Unsurfaced Roads, CRREL, A Field Manual for Measuring Maintenance Problems
- ☐ The Pedestrian Facilities Guidebook, Otak/WSDOT
- ☐ 1999 Audio Visual Catalog, T² Center
- ☐ Unsurfaced Road Maintenance Management, CRREL 1992
- ☐ Emergency Relief Manual, FHWA 1998
- ☐ Improving Highway Safety at Bridges on Local Roads and Streets, LTAP/FHWA 1998

Workbooks and Handouts From T² Center Workshops

- ☐ Access Management, Location and Design, FHWA/NHI, 1998
- ☐ Access Management Guidelines for Activity Centers, NCHRP Report 348, TRB/NRC, 1992
- ☐ Handbook for Walkable Communities, by Dan Burden and Michael Wallwork
- ☐ Geosynthetic Design and Construction Guidelines, FHWA/NHI 1995
- ☐ Planning and Implementing Pedestrian Facilities in Suburban and Developing Rural Areas, TRB
- ☐ Historic and Archeological Preservation: An Orientation Guide, FHWA/NHI
- ☐ Partnering Handbook, FHWA/NHI 1995
- ☐ Construction of Portland Cement Concrete Pavements, FHWA/NHI 1996
- ☐ Rockfall Hazard Mitigation, FHWA/NHI 1994

Self-Study Guides

- ☐ The following noncredit self-study guides are available through WSDOT Staff Development and can be obtained from the T² Center. An invoice will be sent with the books.
- ☐ Technical Mathematics I, \$20
- ☐ Technical Mathematics II, \$20
- ☐ Contract Plans Reading, \$25
- ☐ Basic Surveying, \$20
- ☐ Advanced Surveying, \$20

**Orders may be faxed, mailed, or
phoned to Laurel Gray
Phone: (360) 705-7386
Fax: (360) 705-6858
Mailing Address: WST² Center,
WSDOT H&LP P.O. Box 47390
Olympia, WA 98504-7390**

Computer Programs

The following computer programs may be downloaded from the Internet at:
<http://www.wsdot.wa.gov/TA/T2/computer.htm>

Design Cost Estimate. A software database program that calculates cost projections based on standard items.

Materials Approval Tracking. A software program designed to track materials data, need, status, and approval of any materials sampling and documentation needed for approval.

HyperCalc. A shareware utility for converting between metric and English units.

Force Account Macros. A series of ready-made Excel spreadsheets and macros to save you time on daily force account calculations and reports, including wage and equipment rates.

APWA CAD Symbol Standards and Menus. A public domain program of standard AutoCAD symbols developed by the Washington Chapter of APWA for use with AutoCAD release 14. The program may also be downloaded at:
<http://users.ap.net/~fredlee>

Microsoft Access Runtime Program. Assists in running the Materials Approval Tracking and Design Cost Estimate Program.

UTEC System. A software program consisting of a main menu designed to provide a record base for identifying street locations within an agency.

Opportunities to Enhance Your Skills

For more information, contact the training provider listed.

*For additional training needs contact the Washington State T² Center at:
(360) 705-7386 or 1-800-973-4496. <http://www.wsdot.wa.gov/TA/T2/T2HP.htm>*

Washington State T2 Center

Contact Laurel Gray, Training Coordinator

Ph: (360) 705-7386

Fax: (360) 705-6858

<http://www.wsdot.wa.gov/TA/T2/train.htm>

Roadshows on Snow and Ice Control - November

WSDOT, Staff Development

Local Agencies should call Laurel Gray in the T2 Center to register (360) 705-7386

A Toolkit for Pedestrian Design

October 6, Tumwater; October 13, Everett; October 19, Yakima (at APWA Conference); October 27, Spokane. \$25, \$35 for Yakima session and lunch will be provided. Instructors: Dan Dawson and Mandi Roberts, Otak Consulting Firm. Instruction will be based on the "Pedestrian Facilities Guidebook." This guidebook was published recently by WSDOT and provides guidance in the planning and design of a wide range of pedestrian facilities.

Contract Administration

October 13, Spokane; October 14, Ellensburg; October 27, Mount Vernon; October 28, Auburn; November 3, Vancouver; November 4, Lacey. No fee. Instructor: Jim Powell, FHWA. The class will discuss contract provisions, administrative procedures, and applicable policies related to Federal-aid construction contracts. Discussions will include those contract procedures, policies, and requirements prescribed in 23 CFR and their applicability.

Best Management Practices for Reclaiming Surface Mines

November 1999, Moses Lake (day tba). The class will cover details for carrying out your project's stage and ultimate pit reclamation requirements. Handling of topsoil and other materials for reclamation will be discussed. Subsequent land use and the details of submitting the SM-8A and SM-6 forms will be covered. If you are interested in attending this training contact Ray Hancock, Pits & Quarries Manager for WSDOT Mats Lab in Eastern Region, (509) 324-6167. No fee.

Coming this fall:

Dust Control and Unpaved Road Maintenance - September

Biological Assessments - October/November

The 14 WSDOT construction courses listed below are offered in various locations around the state whenever enough interest warrants scheduling a class. You may call the T2 office and have names put on request lists. You will be notified when a class has been scheduled and your name included on the roster. A description of the classes can be faxed to you. No fee.

- PCC Field Testing Procedures (ABT)
- Aggregate Paving Street Inspection (ACB)
- Bituminous Surface Treatment Inspection (ACC)
- Drainage Inspection (ACF)
- Bridge Structures Inspection (ACM)
- Miscellaneous Documentation (ACY)
- Excavation and Embankments Inspection (AC3)
- Nuclear Gauge, Operator Qualification (ALG)
- Nuclear Gauge, Overview for Supervisors (ANE)
- Nuclear Gauge, Embankment/Surfacing Pavement Applications (ANQ)
- PCC Pavement Production and Placement (APG)
- Electrical-Illumination and Signals (API)
- Asphalt Concrete Pavement Testing Procedures (BG9)

Certification in Construction Site Erosion and Sedimentation Control

September 14-15, October 7-8, November 2-3, December 1-2, all in Kent. This WSDOT class is for prime contractors and local agencies who are responsible for constructing or inspecting WSDOT projects that involve grading or other forms of soil disturbance. Prime contractors with current or pending WSDOT contracts and local agency personnel with jurisdiction over WSDOT projects will be given priority. This two-day course will fulfill the requirement for

Certification in Construction Site Erosion and Sediment Control and Erosion Control Lead General Special Provision (GSP) to the Standard Specifications for Road, Bridge, and Municipal Construction. Contact the Environmental Affairs Office at WSDOT to enroll: (360) 705-7483.

Transpeed, University of Washington

Contact Julie Smith

(206) 543-5539, fax (206) 543-2352

<http://www.engr.washington.edu/~uw-epp/Transpeed/index.html>

Course participants will earn CEUs for each course completed. The CEU is a nationally recognized measure of participation in non-credit continuing education programs which meet established criteria for increasing knowledge and competency.

Prices shown are for local agencies/all others. Price increases take effect September 1, 1999.

Roadway Culvert Hydraulic Design

August 17-18, Seattle. \$150/300;

November 16-17, Vancouver, \$180/360.

Advanced Highway Capacity Analysis for Engineers and Planners

August 25-27, Seattle \$180/350; November 3-5, Seattle, \$220/420.

Design and Application of Roadway Safety Features

September 8-10, Wenatchee; October 6-8, Seattle; November 17-19, Spokane; November 29-December 1, Lacey; December 13-15, Vancouver; January 17-21, Lacey. \$220/420.

Legal Liability for Transportation Professionals

September 14-15, Lacey. \$180/380.

Basic Highway Capacity Analysis for Engineers and Planners

September 21-23, Lacey. \$220/420.

Managing Project Delivery

September 28-30, Seattle; February 2-4, Lacey. \$750/950.

Fundamentals of Traffic Engineering

October 5-7, Lacey. \$220/420, \$30 textbook fee.

Roadway Value Engineering

October 12-14, Seattle. \$220/420.

Traffic Engineering Operations

October 19-21, Lacey. \$220/420, \$30 textbook fee.

Hydrology and Basic Hydraulics

November 3-4, Vancouver. \$180/360.

Traffic Calming: Techniques and Management

November 8-10, Vancouver. \$220/420, \$30 field trip fee.

Manual on Uniform Traffic Control Devices

December 1-3, Seattle. \$220/420, \$60 textbook fee.

Stormwater Engineering for Transportation Professionals

December 8-10, Vancouver. \$220/420.

Public Works Construction Project Management

January 10-11, Seattle. \$180/360, \$75 textbook fee.

Construction Inspection of Public Works Projects

January 13-14, Seattle. \$180/360. Course topics:

University of Washington

Professional Engineering Practice Liaison (PEPL)

(206) 543-5539, fax (206) 543-2352

<http://www.engr.washington.edu/~uw-epp/Epupsc.html>

All classes are held on or near the University of Washington campus in Seattle. Prices indicate early registration/late registration. Early registration fees are applicable up until two weeks before the date of the course.

Use of Constructed Wetlands for Improving Stormwater Quality

September 8-9, 8:30 am to 4:30 pm. 1.4 CEUs. \$345/375.

Basics of Project Management for Design Professionals

September 14, 16, and 21, 4:00-6:30 pm. Attend all three sessions and earn 0.7 CEUs. \$175/195.

Effective Writing for Technical Professionals

September 14, 16, 21, 23, 28; 3:30 pm to 6:30 pm. Attend all five sessions and earn 1.5 CEUs. \$320/345.

Stormwater Treatment: Chemical, Biological and Engineering Principles

September 15-16, 8:30 am to 4:30 pm. 1.4 CEUs. \$345/375.

Fundamentals of Urban Surface Water Management

October 13-14, 8:30 am to 4:30 pm. 1.4 CEUs.
\$345/375.

Design and Retrofit of Culverts for Fish Passage in the Northwest

October 20-21, 8:30 am to 4:30 pm. 1.4 CEUs.
\$345/375.

Seismic Site Response Analysis

December 3-4, 8:30 am to 4:30 pm. 1.4 CEUs.
\$345/375.

Effective Project Negotiation Skills

December 8, 8:30 am to 4:30 pm. 0.7 CEUs. \$215/
240.

Creating Winning Technical Presentations

December 9-10, 8:30 am to 4:30 pm. 1.4 CEUs.
\$345/375.

Engineering Exam Prep Courses

Mechanical Engineering Refresher

September 7 to October 14, Tuesday and
Thursdays. 6:30-9:00 pm. \$495 early registration.

Civil Engineering Refresher Course

September 9 to October 14, Tuesday and
Thursdays. 6:30-9:00 pm. \$345 early registration.

E.I.T./Fundamentals

September 13 to October 20, Monday and
Wednesday, 6:30-9:00 pm. \$325 early registration.

Evergreen Safety Council

401 Pontius Avenue N.
Seattle, WA 98109
(206) 382-4090
(207) 1-800-521-0778

Regularly offered courses include:

- Safety and Health Specialist Certifications
- Flagger Training
- Motorcycle Training (weekends throughout King County)
- Defensive Driving
- Lift Truck Instructor Certification
- First Aid Training

Prices are for members/non-members.

Washington State Traffic Control Supervisor Course

August 23-25, October 4-6, December 13-15,
Seattle. \$395/480.

Washington State Traffic Control Supervisor Recertification

October 12, December 1, Seattle. \$155/185.

Flagger Instructor Certification

September 13-14, November 8-9, Seattle. \$355/
395.

Flagger Instructor Recertification

August 19, November 18, Seattle. \$105 flat.

Presentation Skills for Effective Safety Communications

August 26, Seattle; October 5, Spokane. \$165/
195.

Safety Committee/Safety Meetings

September 9, Seattle. \$165/195

Injury/Illness Prev. Prog./Hazard Communication

September 13, Spokane. \$165/195.

Lift Truck Instructor Certification

September 13-16, Portland. \$795/865.

Accident Investigation/Safety Inspection

September 16, Seattle. \$195/235.

First Aid Instructor Certification

September 20-22, Seattle. \$335/395.

Employee Safety Orientation/Safety Comm.

September 29, Seattle. \$195/235.

Safety: Management and Supervision

October 4, Spokane. \$165/195.

PPE/Materials Handling

October 7, Seattle. \$165/195.

Hazardous Materials Awareness

October 13, Seattle. \$165/195.

Job Safety Analysis/Job Instruction Training

September 14, Spokane. \$165/195.

Workplace Ergonomics

October 27, Seattle. \$165/195.

Conferences and Meetings

APWA's Annual Conference

"1999 International Public Works Congress and Exposition"

September 19-22, 1999, Denver, Colorado. Contact Cheryl McOsker at (816) 472-6100 x 3521 or e-mail at cheryl.mcosker@mail.pubworks.org.

Road and Street Maintenance Supervisors' School - East

October 5-7, 1999, Doubletree Hotel Spokane Valley, Spokane, WA. For information call WSU (509) 335-3530 Kristin Finch.

1999 Bicycle and Pedestrian Conference

"Footprints and Bike Tracks"

October 7-8, 1999 Seattle Center NW Rooms, Seattle, WA. For further information contact Julie Matlick at WSDOT at (360) 705-7505.

2nd Annual Livable Communities Fair

October 9, 1999, Seattle Center NW Rooms, Seattle, WA. For further information contact Julie Matlick at WSDOT at (360) 705-7505.

American Public Transit Association Annual Meeting and Exposition

October 10-14, 1999, Orlando, FL. For information (202) 898-4038, fax (202) 898-4029.

Northwest Pavement Management Association Fall Conference

October 18-21, 1999, Columbia River DoubleTree Hotel, Portland, Oregon. For Information contact Paul Sachs, Northwest Technology Transfer Center at (360) 705 - 7352 or E-mail Sachsp@wsdot.wa.gov.

International Conference on Accelerated Pavement Testing

October 18-20, 1999, Reno, Nevada. First announcement and call for papers. Information: Maria Ardila-Coulson, Director, Nevada T2 Center/257, University of Nevada, Reno, NV 98557, Phone (702) 784-1433, fax (702) 784-1429, e-mail maria@unr.edu.

APWA Fall Conference

October 19-22, 1999, Yakima Convention Center, Yakima, WA. For information contact Wendy Leinan at (509) 575-6068 or email at wleinan@ci.yakima.wa.us.

Road and Street Maintenance Supervisors' School - West

December 6-8, 1999, Doubletree Hotel, Bellevue, WA. For information call WSU (509) 335-3530 Kristin Finch.

Road Builders' Clinic

March 7-9, 2000, Coeur d'Alene Resort, Coeur d'Alene, ID. The Superpave Asphalt Workshop will be March 6-7. Washington State University Conferences and Institutes is sponsoring. Contact them at (509) 335-3530 for information.

Rondabout Conference

May 1-3, 2000, Doubletree Hotel at Seatac Airport, Seatac, WA. Contact Darlene Sharar at WSDOT for further information, (360) 705-7383.

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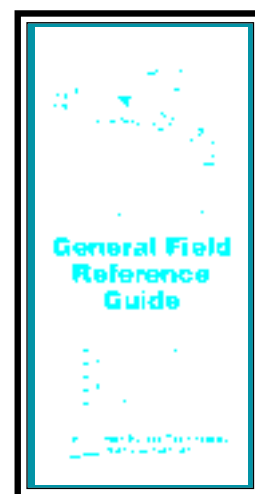
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T² Web Site

<http://www.wsdot.wa.gov/TA/T2/T2HP.htm>

Toll Free Training Number

1-800-973-4496



Washington State Technology Transfer Center
WSDOT-Highways & Local Programs Service Center
P.O. Box 47390
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***A newsletter of the Local Technical
Assistance Program (LTAP)***

T² **Bulletin**

Issue Number 63, Summer 1999

The Local Technical Assistance Program (LTAP) is a national program financed by the Federal Highway Administration (FHWA) and individual state transportation departments. Administered through Technology Transfer (T²) Centers in each state, LTAP bridges the gap between research and practice by translating state-of-the-art technology into practical application for use by local agency transportation personnel.

Any opinions, findings, conclusions, or recommendations presented in this newsletter are those of the authors and do not necessarily reflect the views of WSDOT or FHWA. All references to proprietary items in this publication are not endorsements of any company or product.



**Washington State
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Highways & Local Programs Service Center



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